AMENDMENT NUMBER ONE

THIS AMENDMENT, Made the _	day of	2006
BY AND BETWEEN	THE CITY OF WICHITA, KANSAS A Municipal Corporation, hereinafter referred to as "OWNER"	
AND	SCHAEFER JOHNSON & ASSOCIATES, P.A., I referred to as "ARCHITECT"	hereinafter

WHEREAS, the parties have heretofore, on the 2nd day of November, 2005, entered into a Contract; and

WHEREAS, the parties wish to modify the "SCOPE OF SERVICES" concerning the improvements at the Wichita Art Museum (WAM) which is the subject matter of such Contract.

NOW, THEREFORE, in consideration of the promises and covenants herein contained and to be performed, the parties hereto agree as follows:

I. The Contract between the parties dated November 2, 2005 shall be amended to modify the Scope of Services (EXHIBIT "A") to be performed by the **ARCHITECT** as follows:

The ARCHITECT will provide complete design, architectural, mechanical, electrical, structural engineering and related services for completion of the project described as OPTION TWO in the completed Schematic Design Study – Improvements to Wichita Art Museum, dated February 3, 2006, a copy of which is attached hereto and which is incorporated herein by reference. Work will include Design Development, Construction Documents, Bidding Assistance and Construction Administration. In addition, the ARCHITECT will evaluate the Appelbaum & Himmelstein Report dealing with the WAM HVAC systems. The ARCHITECT will provide a written summary of the recommended modifications to the OWNER. The summary will identify those recommended modifications that are beyond what is described in Option Two, practical and/or limited by available funding. Any recommended modification that is practical, will enhance Option Two and can be done within the project budget shall be incorporated.

II. The Contract between the parties dated November 2, 2005, shall be amended to change the PAYMENTS. The **OWNER** agrees to pay the **ARCHITECT** for services rendered under this Amendment Number One a total fee established as follows:

A. Modify Paragraph V, PAYMENT PROVISIONS as follows:

For the Architectural, Structural, Electrical and Mechanical Engineering services, Design Development, Construction Documents, Bidding and Construction Administration Phases and other related items as identified in "Scope of Services, Exhibit "A", a single stipulated lump sum fee including reimbursable expenses of ninety-nine thousand dollars (\$99,000.00) which shall constitute complete compensation for the services.

III. All other provisions of the November 2, 2005 Contract and subsequent Amendments between the parties hereto not modified herein shall remain in full force and effect.

IN TESTIMONY WHEREOF, the parties hereto have executed this Agreement the day and year first above written.

CITY OF WICHITA, KANSAS

	By Carlos Mayans, Mayor
	SCHAEFER JOHNSON COX FREY & ASSOCIATES, P.A.
	Joseph A. Johnson, AIA Senior Vice President
ATTEST:	J. Samuel Frey, AIA Senier Vice President
Karen Sublett City Clerk	

Gary E. Rebenstorf Director of Law

Approved as to form:



Schematic Design Study Improvements to Wichita Art Museum Wichita, Kansas

3 February 2006

Emprise Center 257 N. Broadway Wichita. Kansas 6 7 2 0 2 - 2 3 1 7

Ph 316.684.0171 Fax.316.684.8835 w.w.s.j.c.f.com architecture@ sjcf.com A study conducted by Schaefer Johnson Cox Frey ARCHITECTURE in consultation with

Manson Ward Legion / SJCF, Inc. - Mechanical Engineer Stefan Voegeli & Associates, Inc. - Electrical Engineer

City of Wichita representatives

Ed Martin, Building Services Manager Norman Jakovac, Special Projects Coordinator Jeffrey Myers, Construction Superintendent James Mayer, Facility Maintenance Supervisor Mike Seis, Museum Operations Supervisor

Associates
Joseph A. Johnson
Kenton E. Cox
J. Samuel Frey
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Table of Contents

Background	1
Site Inspection	1
Options	2
Option One	3
Access	3
Enumeration of Work Required	4
Cost Estimate	6
Option Two	7
Enumeration of Work Required	7
Cost Estimate	9
Considerations	10
Construction Time Frame	10
Recommendation	11
Drawings	
Existing Floor Level	A1.0
New Floor Level	A1.1
Existing Roof Level	A2.0
New Roof Level	A2.1
New Mechanical Floor Plan	M1.1

Background

The City of Wichita undertook a study of the Wichita Art Museum mechanical penthouse that was constructed at the time of the Edward Larabee Barnes addition in the 1970's. This space is located over the Rotunda of the original 1935 building and was formerly the roof.

Since the time of the 1970's construction there have been numerous leaks in the Rotunda which have been attributed to the humidification system, leaking floor or roof and/or wind driven rain. In addition, the area of roof under the elevated chillers south of the penthouse does not have a proper slope and may be a significant contributing factor.

Site Inspection

A site inspection of the study area was made by architectural and engineering staff along with City personnel. The following deficiencies were identified:

- The steam humidification system, as designed, is not suited for zone humidification and has deteriorated to the point where it is not serviceable.
- The MZU's show some rust damage, but are generally serviceable. Currently one of the MZU's is receiving a new motor and belts. The motor for the other MZU was replaced within the past two years.
- The floor of the mechanical room was formerly the bituminous roof of the original 1935 building. The roofing material and surface coating have cracked. Museum personnel have stated that a multi-gallon water spill within the past two years leaked through the roofing and into the Rotunda area below.
- The corrugated metal panel wall between the mechanical room and exterior chiller area is insulated with foam insulation sheets that are loose and are providing limited (if any) insulation value. The insulation system is not continuous and is subject to condensation forming on the interior face of the wall. The adhesive used to attach the insulation has failed. It was also noted that the bottom closures for the corrugated panels were generally missing and could be allowing wind driven rain and snow to enter the building. The corrugated metal panels forming the west air distribution slot is uninsulated and inaccessible from the mechanical room. The south air distribution slot is not observable, but is suspected to be uninsulated. The east distribution slot, at least partially observable, was insulated with foam insulation sheets that have fallen down. The distribution slots are open to the mechanical room and therefore subject to humidity. This uninsulated condition could allow for the formation of ice on the inside face of all the metal panels regardless of location and result in subsequent leaking.
- The chiller area roof is of a very low slope, if not flat, and ponds water and ice. There is no overflow roof drain in the event that the primary drain clogs.
- The penthouse roof slopes to a primary roof drain, but there is no overflow roof drain in the event that the primary drain clogs.

Options

After extensive discussion with the City's representatives, the consultant investigated two options in depth that the consultant believes will solve the leakage problem(s). The following is a brief description which is further amplified in this report.

Option One consists of replacing the old MZU's in toto and installing new units, along with a new humidification system. The existing bituminous flooring would be removed and a new waterproof membrane type floor installed. Roofing, siding and insulation deficiencies would also be addressed.

Option Two consists of refurbishing and upgrading the MZU's in place, along with a new humidification system. The existing bituminous flooring would remain in place, be repaired and a new traffic coating applied to the surface. A waterproof membrane sheet would also be placed under the MZU's to complete the waterproof membrane. Roofing, siding and insulation deficiencies would also be addressed.

OPTION ONE

The Barnes addition did not make provision for future replacement of the MZU's. With some effort, the existing equipment can be cut apart and removed through the man door located in the south wall. However, the size of the new equipment requires that there be provision made for installation of a much larger piece of equipment.

The following alternatives do not attempt to evaluate the merits of installing the MZU's as a single unit or in modules because the minimum size exceeds the access available. No consideration has been given to the scheduling of the floor finish or other work that may be required.

Each alternative will require extensive weather protection of existing electrical, control equipment, ducts and floor penetrations.

The primary consideration is access.

Access

North Wall Access

- Remove north gallery skylight and install permanent flashed cap.
- Relocate conduit and equipment on north wall of penthouse.
- Remove east 20' of original building parapet located in penthouse.
- Remove east 1/2 of north exterior brick.
- Remove east 20' of CMU wall, including steel bracing. Protect edge of roof deck, light weight concrete fill and roofing.
- Remove existing equipment and ducts.
- ► Install new MZU's, humidification system and ductwork.
- Construct CMU backup at north wall and rebrick to match existing.

South Wall Access

- Remove existing west chiller and place on ground.
- Disassemble steel support structure for west chiller and place on ground.
- Relocate conduit and equipment in area where chiller removed.
- Remove 20' of corrugated metal siding. Protect edge of roof deck, light weight concrete fill and roofing.
- Remove existing equipment and ducts.
- Install new MZU's, humidification system and ductwork.
- Reinstall corrugated metal panels.
- Reinstall chiller support framing and chiller.

Roof Access

- Remove east half of existing penthouse roof structure, including roof joists from east wall to center steel beam.
- Remove existing equipment and ducts.
- Install new MZU's, humidification system and ductwork.
- Install new metal deck, light weight concrete, and roofing.

Enumeration of Work Required - OPTION ONE

The consultant's evaluation of the mechanical equipment and access options was presented to City Staff on 22 November 2005 for their consideration. The consultant was directed to proceed with a full solution based on using <u>Roof Access</u>. The major areas of work are enumerated as follows:

Existing Penthouse Roof Over MZU's

- Remove existing steel deck, vent board, metal flashing, and light weight concrete (LWC) insulation and roofing at east half of roof.
- Remove remainder of vent board, metal flashing, and LWC insulation and roofing at west half of roof.
- Remove steel joists.
- ► Reinstall steel joists after new multi-zone units (MZU's) placed on floor.
- Install new metal deck, tapered insulation system, roofing over entire roof.
- Install new overflow roof drain.
- Reinstall metal wall flashing.

Existing Interior Penthouse Floor

- Remove existing roofing system.
- Shot-blast concrete floor.
- Clean existing floor drain and piping.
- Install new waterproof system on floor, including curbs to 4" minimum.

Existing South Penthouse Wall

- Remove existing foam board from interior of west wall.
- Seal all metal panel joints as necessary from exterior.
- Install waterproof filler between raised concrete curb @ west wall and exterior metal panels.

Existing Exterior Penthouse Wall At Chillers

• Install insulated metal panel system over the corrugated metal panels on all four sides of the enclosure. Remove, reflash and seal all louvers, fans, etc.

Existing Exterior Penthouse Roof Under Chillers

- Remove existing roofing system.
- ▶ Install raised curb and cant at corrugated metal wall to allow increase in roof slope.
- Clean existing roof drain and piping piping.
- Install new tapered insulation system, roofing and metal flashing.
- Install new overflow roof drain with interior piping.

Generator Enclosure

Construct 8' high brick enclosure around the emergency generator.

Mechanical

- Remove and replace existing MZU-1, MZU-2 and associated humidifier sections, ductwork, piping and controls.
- Remove existing steam and condensate piping, exhaust fans 2, 3, 5, 6 and associated ductwork.
- Remove the existing seven zones of supply and return ductwork for each MZU and install new ductwork from the first joint of ductwork on the east and west walls of the penthouse to the MZU's.
- The existing electric heating coils for each MZU, HC-1 through HC-14 to remain. Repair/replace electric heating coils that are not in working condition.
- Verify how the MZU's are being controlled with the City's Temperature Control Contractor and make necessary interface.
- Install individually zoned electric humidifiers. Locate the humidifiers in the penthouse below the zone (ducts) it serves. Locate the humidistats in the space that the zone serves.
- Install water softener system for humidifiers.
- Air and water balance each system; including each zone along with existing grilles, registers and diffusers.
- At the roof over the penthouse, install overflow roof drain and piping to down spout nozzle at the roof below.
- At the exterior chiller roof, install overflow roof drain and piping down through building to down spout nozzle at ground level.

Electrical

- Connect MZU's and humidifiers.
- Remove existing 85 KW engine generator from existing penthouse roof and replace with 450 KV engine generator. (Note: Refurbishing existing City Hall engine generator would be as expensive as a new one.) Locate the new engine generator at grade level within a new enclosure within the vicinity of existing chiller/transformer enclosure. The loads served by the new unit will be as follows:
 - 1. Emergency lighting, exit lighting, fire alarm, security, sump pumps, sewage ejectors and miscellaneous loads.
 - 2. Heating and cooling load for the Art Vault.
 - 3. Depending on the load required for items 1 and 2, the passenger elevator at the Great Hall may be added to the system.

Note: The use of a "stand alone" heating and cooling unit for the art storage areas in lieu of a larger capacity engine generator was investigated, but pressurized water and refrigerant lines would be introduced into art storage areas. This concept was discarded by the consultant as possibly endangering the art.

Cost Estimate - OPTION ONE

<u>Mechanical</u>

MZU-1, MZU-2, ductwork, piping, crane 14 Humidifiers, piping Temperature Controls Air/Water Balance Water Softener System Demolition	\$200,250 101,500 35,000 12,500 15,000
Sub Total Remodel @ 25%	379,250 <u>94,812</u>
Sub Total OH&P @ 25%	474,062 <u>118,516</u>
Subcontractor Total	\$592,578
<u>Electrical</u>	
Generator, transfer switch Rework distribution to emergency loads Generator service to building Connect MZU-1 and MZU-2 and humidifiers	\$70,000 30,000 15,000 <u>15,000</u>
Sub Total Remodel @ 10%	130,000 <u>13,000</u>
Sub Total OH&P @ 25%	\$143,000 <u>35,750</u>
Subcontractor Total	\$178,750
<u>General</u>	
General Conditions Demo and rebuild existing roof for access Remove existing b.u. floor, add coating and EPDM Remove foam wall panels and seal walls Metal wall panels, insulation and flashing Tapered insulation and roofing system under chiller Generator Enclosure Miscellaneous	\$80,000 50,000 50,000 5,000 40,000 30,000 50,000 10,000
Sub Total Remodel @ 25%	315,000 <u>78,750</u>
Sub Total OH&P @ 25%	393,750 98,438
Subcontractor Fee @ 10% of \$771,328	77,133
General Contractor Sub Total	\$569,321
General Contractor Total - OPTION ONE	\$1,340,649

OPTION TWO

The consultant's preliminary OPTION ONE findings were presented to the City Staff on 25 January 2006 for their consideration. A second option, referenced to as OPTION TWO, was presented that significantly reduced the amount of work and disruption required to accomplish the goal of providing a leak-free museum. The consultant was directed to proceed with a full solution based on this option.

Enumeration of Work Required - OPTION TWO

The major areas of work are enumerated as follows:

Existing Penthouse Roof Over MZU's

Install new overflow roof drain.

Existing Interior Penthouse Floor

- Remove loose or flaking "blue" coating on floor.
- Repair bituminous floor (former roof).
- Recoat entire bituminous floor with wearing surface.
- Install EPDM waterproof membrane under MZU's and seal to floor.

Existing South Penthouse Wall

- Remove existing foam board from interior of west wall.
- Seal all metal panel joints as necessary from exterior.
- ► Install waterproof filler between raised concrete curb @ west wall and exterior metal panels.

Existing Exterior Penthouse Wall At Chillers

Install insulated metal panel system over the corrugated metal panels on all four sides of the enclosure. Remove, reflash and seal all louvers, fans, etc.

Existing Exterior Penthouse Roof Under Chillers

- Remove existing roofing system.
- Install raised curb and cant at corrugated metal wall to allow increase in roof slope.
- Clean existing roof drain and piping piping.
- Install new tapered insulation system, roofing and metal flashing.
- Install new overflow roof drain with interior piping.

Generator Enclosure

► Construct 8' high brick enclosure around the emergency generator.

Mechanical

- Remove and replace chilled water coils in MZU-1 and MZU-2.
- Install stainless steel drain pan in bottom of each MZU.
- Field fabricate air mixing housing and bag filter housing for each MZU. Insulate housing. Replace existing bag filters.

- Remove existing steam and condensate piping, exhaust fans 2,3 and associated ductwork.
- The existing heating electric heating coild for each MZU, HC-1 through HC-14 to remain. Repair/replace electric heating coils that are not in working condition.
- Verify how the MZU's are being controlled with the City's Temperature Control Contractor and make necessary interface.
- Install individually zoned electric humidifiers. Locate the humidifiers in the penthouse below the zone (ducts) it serves. Locate the humidistats in the space that the zone serves.
- Install water softener system for humidifiers.
- Air and water balance each system; including each zone along with existing grilles, registers and diffusers.
- At the roof over the penthouse, install overflow roof drain and piping to down spout nozzle at the roof below.
- At the exterior chiller roof, install overflow roof drain and piping down through building to down spout nozzle at ground level.

Electrical

- Remove existing 85 KW engine generator from existing penthouse roof and replace with 450 KV engine generator. (Note: Refurbishing existing City Hall engine generator would be as expensive as a new one.) Locate the new engine generator at grade level within a new enclosure within the vicinity of existing chiller/transformer enclosure. The loads served by the new unit will be as follows:
 - 1. Emergency lighting, exit lighting, fire alarm, security, sump pumps, sewage ejectors and miscellaneous loads.
 - 2. Heating and cooling load for the Art Vault.
 - 3. Depending on the load required for items 1 and 2, the passenger elevator at the Great Hall may be added to the system.

Cost Estimate - OPTION TWO

<u>Mechanical</u>

MZU-1, MZU-2, coils, ductwork, piping 14 Humidifiers, piping Temperature controls Air/water balance Water softener system Demolition	\$ 75,000 101,500 35,000 12,500 15,000
Sub Total Remodel @ 25%	254,000 <u>63,500</u>
Sub Total OH&P @ 25%	317,500 <u>79,375</u>
Subcontractor Total	\$396,875
<u>Electrical</u>	
Generator, transfer switch Rework distribution to emergency loads Generator service to building Connect MZU-1 and MZU-2 and humidifiers	\$70,000 30,000 15,000 <u>15,000</u>
Sub Total Remodel @ 10%	130,000 <u>13,000</u>
Sub Total OH&P @ 25%	\$143,000 <u>35,750</u>
Subcontractor Total	\$178,750
General	
General Conditions Chemically encapsulate rust in MZU's Repair existing b.u. floor, add coating and EPDM Remove foam wall panels and seal walls Metal wall panels, insulation and flashing Tapered insulation and roofing system under chiller Overflow roof drain at penthouse roof Generator Enclosure Miscellaneous	\$60,000 2,500 35,000 5,000 40,000 30,000 1,500 50,000 10,000
Sub Total Remodel @ 25%	234,000 <u>58,500</u>
Sub Total OH&P @ 25%	292,500 73,125
Subcontractor Fee @ 10% of \$575,625	<u>57,563</u>
General Contractor Sub Total	<u>\$423,188</u>
General Contractor Total - OPTION TWO	\$998,813

Considerations

OPTION ONE is the more expensive solution of the two investigated and will result in the removal of the mechanical room roof in order to gain access for the placement of the multizone air handling units. The time period when the roof will not be weather tight could be in the 7-10 day range. Measures would have to be taken to protect electrical panels, electric duct heaters and mechanical equipment controls during this period of vulnerability. In addition, the floor would have to be protected to prevent possible water migration through the existing bitumen floor onto the ceilings of the Rotunda below and at the return air slots along the perimeter of the mechanical room in the event of precipitation.

Removing the existing flooring (built-up roof) will result in the introduction of solvent fumes and dust into ducts and other difficult to seal areas. The use of solvents is necessary to remove excessive bitumen prior to bead blasting while the bead blasting is necessary as a preparatory step for the installation of a new floor membrane.

The major benefits of this option are the installation of new multi-zone air handling units and a new monolithic floor.

OPTION TWO does not expose the mechanical room to the exterior. All components of the building envelope remain in place keeping the building weathertight and secure during all phases of the work.

The existing flooring would remain in place and be recoated with a waterproof membrane. Some preparatory work might generate dust, but not of the quantity or fineness of bead blasting. The floor areas under the multi-zone air handling units would be covered with sheet roofing and bonded to the existing flooring creating a continuous waterproof membrane.

This option provides for the complete refurbishing of the multi-zone air handling units with the exception of the motors which are two years old and would be reused. We estimate that this work would result in equipment with at least a twenty (20) year service life with normal maintenance.

Construction Time Frame

Pre Construction

Shop drawings, equipment manufacture and duct fabrication will require approximately fourteen weeks from the date that the contractual notice to proceed is given to the contractor. Manufacturing times for the mechanical equipment will determine the start date and is dependent upon the season of the year. For instance, air conditioning equipment lead times increase during the cooling season. This fact could increase the delivery time to eighteen weeks. During this time, the Museum may remain in operation less the time necessary to secure the artwork.

<u>Construction</u>

MZU-1 and MZU-2 serve all the galleries in the 1935 building and Barnes addition. Shutting these units down effectively closes the Museum to the public for the duration of the art move, construction, recommissioning of the mechanical system, and reinstallation of the artwork.

The construction time frame is directly related to the placement and installation of the MZU's and new humidification system. The exterior metal panel work and roofing can take place concurrent with the interior mechanical and electrical work having little or no impact on the schedule. Flooring work will follow the completion of the electrical work and will determine when recommissioning of the mechanical system can begin. The construction portion of the work is estimated to take approximately fourteen weeks for OPTION ONE and twelve weeks for OPTION TWO.

Recommissioning

Recommissioning is estimated to take <u>two weeks</u>. During this time, air diffusers in all galleries will be balanced and the galleries humidified to proper levels.

Recommendation

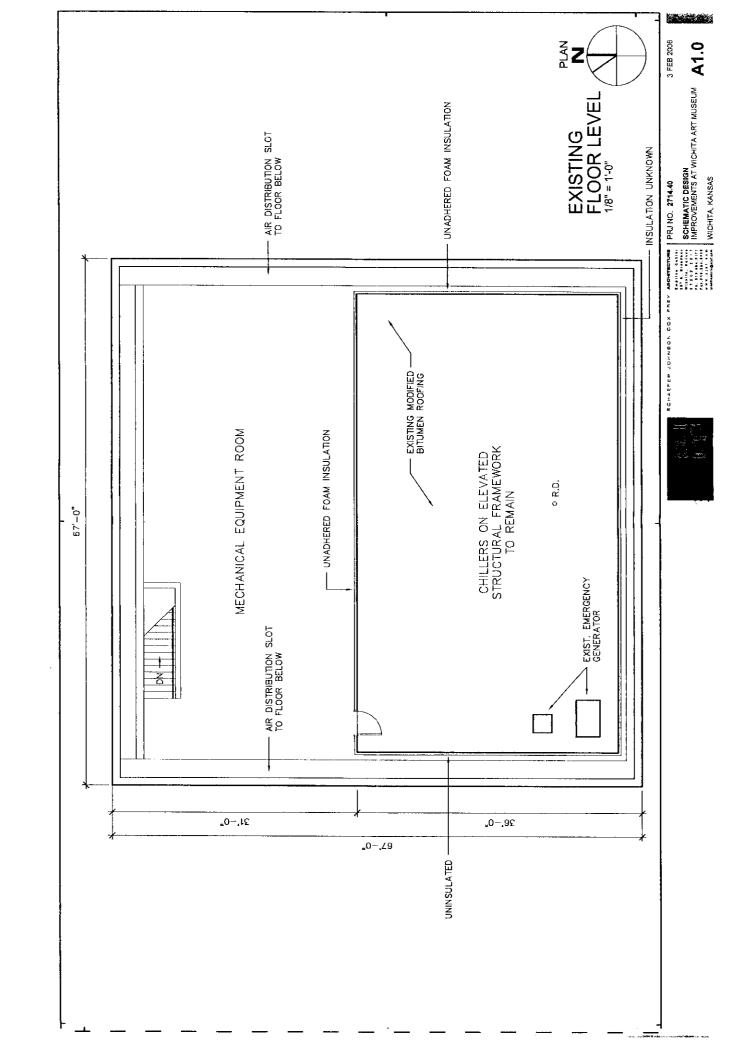
The consultant recommends OPTION TWO due to the following advantages:

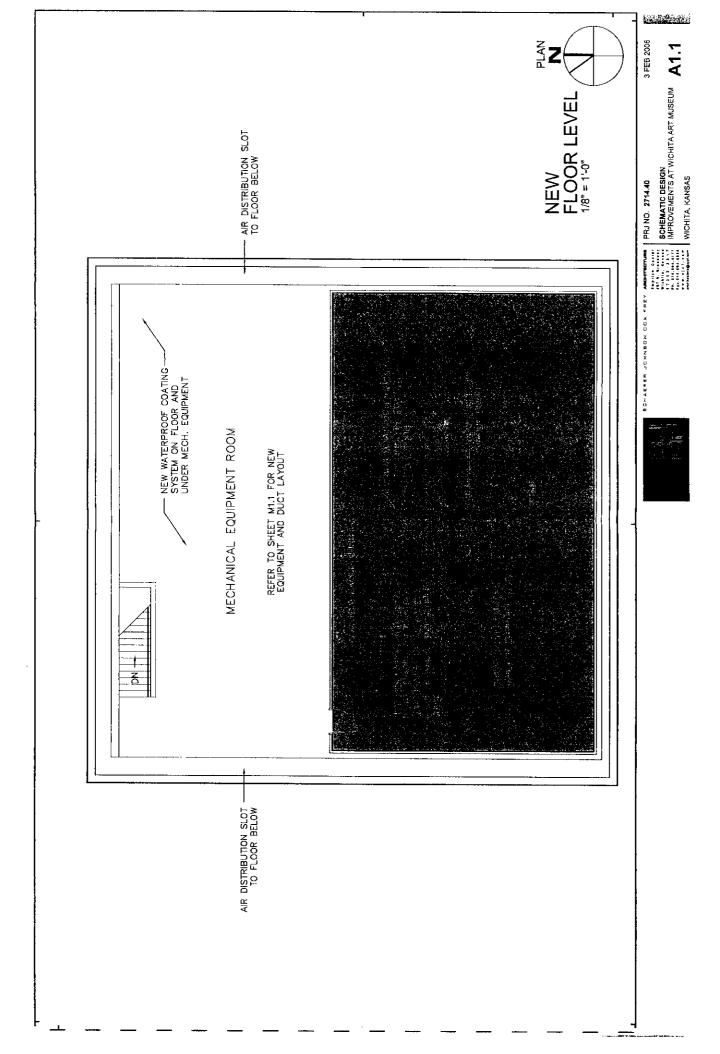
- The rebuilt MZU's will provide a significant service life of 20 years.
- The roof of the mechanical room will not be removed subjecting the interior of the building to potential weather damage.
- ► The cost for this option is significantly less (25%).

We are confident that this option will correct the water problems that the Museum is experiencing.

Schaefer Johnson Cox Fey ARCHITECTURE

Edward M. Koser AIA Vice President





ZAN

EXISTING ROOF LEVEL

EXISTING MODIFIED . BITUMEN ROOFING MECHANICAL EQUIPMENT BELOW о В.D. ROOF (TO REMAIN)

SCHAEFER JOHANSON COX THE AMERICAN SCHEMATIC DESIGN SCHEMATIC DESIGN MINISTER MUSEUM A2.0

3 FEB 2006



NEW ROOF LEVEL 1/8" = 1:0"

- NEW OVERFLOW ROOF DRAIN EXISTING MODIFIED BITUMEN ROOFING o R.D. MECHANICAL EQUIPMENT BELOW o R.D. ROOF (TO REMAIN)

SCHEMATIC DESIGN
SCHEMATIC DESIGN
IMPROVEMENTS AT WICHITA ART MUSEUM
A2.1

3 FEB 2006

ALTA ME



PLAN

PRJ NO. 2714.40
PRJ NO. 2714.40
SCHEMATIC DESIGN

SCHAEFER JOHNSON DOX FREY

